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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/544,762	04/07/2000	Shannon Mary Nelson	NORTH-390A/A-2241	9968

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EXAMINER	
SEDIGHIAN, REZA	
ART UNIT	PAPER NUMBER
2633	13

DATE MAILED: 04/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/544,762	NELSON ET AL.	
	Examiner	Art Unit	
	M. R. Sedighian	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 January 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. This communication is responsive to applicant's 1/14/2003 amendments in the application of Shannon Mary Nelson et al. for "Rugged shock resistant backplane for embedded systems" filed 4/7/2000. The amendments have been entered. Claims 1-15 are now pending.

2. Claims 1-15 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. As to claim 1, 8, and 15, specification does not clearly describe about circuit cards that are maintained in fixed relationship to one another via a common backplane to maintain continuous optical intercard communications between each of the circuit cards when the circuit cards become intermittently dislodged from electrical connection to the backplane.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-2, 6-9, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karstensen et al. (US patent No: 5,923,451) in view of Davidson (US patent No: 6,160,653).

Regarding claims 1, 8, and 15, as it is understood in view of above 112 problem, Karstensen discloses a shock-resistant system (fig. 1) for interconnecting circuit cards (1, fig. 1)

to enable data to be transmitted and received therebetween (col. 1, lines 5-11, col. 4, lines 65-67, col. 5, lines 1-2), comprising: a common backplane (col. 5, line 3 and 10, fig. 1) having a plurality of circuit card connectors (col. 5, line 6) disposed in spaced apart relation thereon for supporting circuit cards in a generally upright parallel relationship (electronic devices 1 are arranged in a parallel relationship with respect to each other); a plurality of circuit cards (1, fig. 1), each being mounted to one of the circuit card connectors (col. 5, lines 5-6) and having a transmitter LED (1, 4, fig. 2) and a receiver photodiode formed thereon (1, 5, fig. 2); an optical pathway formed between each of the circuit cards (figure 2 shows electronic devices 1 are optically connected to each other), each optical pathway forming a respective independent parallel optical connection between the transmitter LED (4, fig. 2) on one of the circuit cards (1, fig. 2) and the receiver photodiode (5, fig. 2) on any one of the circuit cards (col. 6, lines 4-15); and wherein the circuit cards are maintained in fixed relationship to one another via the common backplane to maintain continuous optical intercard communications between each of the circuit cards (col. 6, lines 15-16), and the intercard communications being conducted independent of shock-susceptible wired connectors (col. 5, lines 44-46). Karstensen differs from the claimed invention in that Karstensen does not specifically disclose the interconnected circuit cards are within a computer system. Davidson teaches the interconnection of optical circuit cards (100, 104, fig. 8) within a computer system (col. 12, lines 14-28). One of the ordinary skill in the art would have been motivated to incorporate a plurality of interconnected optical circuit cards within a computer system to provide a high speed data communication between the elements of the computer system. As it is taught by Davidson, it would have been obvious to an artisan at the time of invention to incorporate a plurality of interconnected optical circuit cards such as the

ones of Karstensen within a computer system to provide a high speed optical data communication between the sub-system elements within a computer and to increase the bandwidth.

Regarding claims 2 and 9, Karstensen discloses optically transmitted infrared radiation (col. 6, lines 6-8).

Regarding claims 6 and 13, Karstensen discloses the first and second circuit cards (1, fig. 1) are operative to run an embedded application (col. 6, lines 15-42).

Regarding claims 7 and 14, Karstensen disclose the system comprises a multiplicity of circuit cards (1, figs. 1, 2) each having an LED (4, fig. 2) and a photodiode (5, fig. 2) formed thereon and the circuit cards are being operative to transmit and receive data via LEDs and photodiodes with respective other circuit cards (col. 6, lines 4-15).

5. Claims 3-4 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karstensen et al. (US patent No: 5,923,451) in view of Davidson (US patent No: 6,160,653) and in further view of Croft et al. (US Patent No: 5,864,708).

Regarding claims 3-4 and 10-11, the combination of Karstensen and Davidson differs from the claimed invention in that Karstensen and Davidson do not specifically disclose the transmission and reception signals comprise a standardized infrared communication scheme protocol that is developed by the infrared data association. Croft discloses wireless transceivers (63, 64, fig. 1) that communicate with each other by using Infrared Data Association standards (col. 3, lines 5-14). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate Infrared Data Association standards or protocols such as

the one discussed by Croft for the optical data transmission and reception in the modified optical communication systems of Karstensen and Davidson in order to provide a reliable method of data transmission by implementing a standard Infrared protocol to detect transmission errors and to avoid collisions.

6. Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karstensen et al. (US patent No: 5,923,451) in view of Davidson (US patent No: 6,160,653) and in further view of Barina (US Patent No: 4,829,596).

Regarding claims 5 and 12, the combination of Karstensen and Davidson differs from the claimed invention in that Karstensen and Davidson do not discloses the first and second circuit cards are housed within an enclosure. Barina discloses a housing (12, fig. 1) which includes a series of slots that receive a plurality of circuit boards (16-18, fig. 1) that are connected to a mother board which extends along the back surface of the housing to a backplane (col. 2, lines 55-61 and 11, fig. 1). It is inherent that electrical or optical components are housed within a housing for the reason of safety and protection, and it would have been obvious to provide an enclosure such as the one Barina for the optical circuit cards in the modified optical communication system of Karstensen and Davidson in order to protect it's components and to provide safety for the users.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad R Sedighian whose telephone number is (703) 308-9063. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703) 305-4729. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9314

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

M. R. Sedighian

Mohammad Sedighian
Patent Examiner
Art Unit: 2633